Docket No.: 5000-0124PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Volker MAYWALD et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: May 20, 2005

Art Unit: N/A

For: PREPARATION OF BENZOPHENONES

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

Dated: May 20, 2005

Respectfully submitted,

By #32,858

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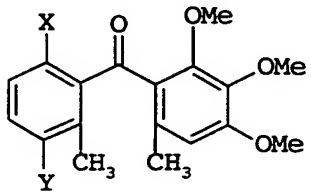
Attachment(s)

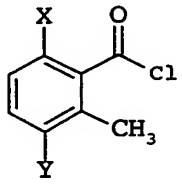
We claim:

1. A process for preparing benzophenones of the formula I,



I

where X may be chlorine, hydroxyl, methoxy or C_1-C_6-alkylcarbonyloxy, and Y may be chlorine or bromine, by reacting an acid chloride of the formula II



II

where X and Y are as defined above with 3,4,5-trimethoxytoluene, which comprises carrying out the reaction in the presence of

a) an aromatic hydrocarbon as a diluent and

b) from 0.01 to 0.2 mol% of an iron catalyst, based on the acid chloride,

c) at a temperature between 60°C and the boiling point of the particular diluent.

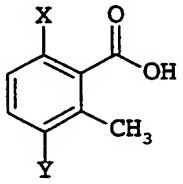
2. A process as claimed in claim 1, wherein the diluent used is chlorobenzene.

3. A process as claimed in claim 1 or 2, wherein 3,4,5-trimethoxytoluene is initially charged, optionally in the particular diluent, and the acid chloride together with the iron catalyst is metered in, optionally in the particular diluent.

4. A process as claimed in any of claims 1 to 3, wherein the hydrochloric acid forming in the reaction is removed from the reaction mixture by stripping using an inert gas stream.

5. A process as claimed in any of claims 1 to 4, wherein the diluent is distilled off toward the end or during the course of the reaction, and the remaining product melt is crystallized in a C_1-C_6-alcohol.

6. A process as claimed in any of claims 1 to 5, wherein the acid chloride of the formula II is prepared by reacting an acid of the formula III

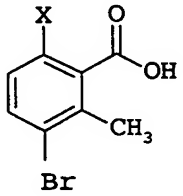


III

where X and Y are each as defined above with thionyl chloride or phosgene, optionally in the presence of dimethylformamide, in the same diluent which is also used in the subsequent Friedel-Crafts stage.

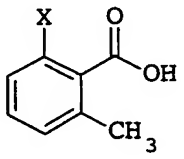
7. A process as claimed in claim 6, wherein, after formation of the acid chloride II, at least a portion of the diluent is distilled off with excess thionyl chloride and recycled into the process.

8. A process as claimed in claim 6, wherein the acid of the formula IIIa



IIIa

is prepared by brominating the compound IV



IV

with elemental bromine in the same diluent which is also used in the two subsequent stages.

9. A process as claimed in claim 8, wherein at least a portion of the diluent and excess bromine is distilled off at the end of the bromination and recycled into the process.